



5th Management Plans Work Group **Turf Breakout Meeting**

April 28, 2021

Google Form Questionnaire

- Additional opportunity to provide input and feedback on items discussed in the meeting
- Questions are optional so you can choose what you'd like to provide input on
- Responses will be posted anonymously on our 5MP Concepts Webpage
- Please respond by 5/12/2021

Link to Google Form Questionnaire: <https://forms.gle/YDenixCFAmBzk3648>



Agenda

- I. Welcome
 - i. Drivers for the 5th Management Plans
- II. Recap of Previous Meetings
- III. Status and Timeline of 5th Management Plans
- IV. Proposed Program Updates
 - i. Updates to 5MP Golf Allotment Structure
 - ii. Presentation from Arizona Alliance for Golf
 - iii. Discussion
- V. Closing

Drivers for the 5th Management Plans





Arizona's Water Future

**As Arizona transitions to a drier future, we
must continue to promote a culture of
conservation - one that enables the
unbeatable quality of life and boundless
opportunity we enjoy.**

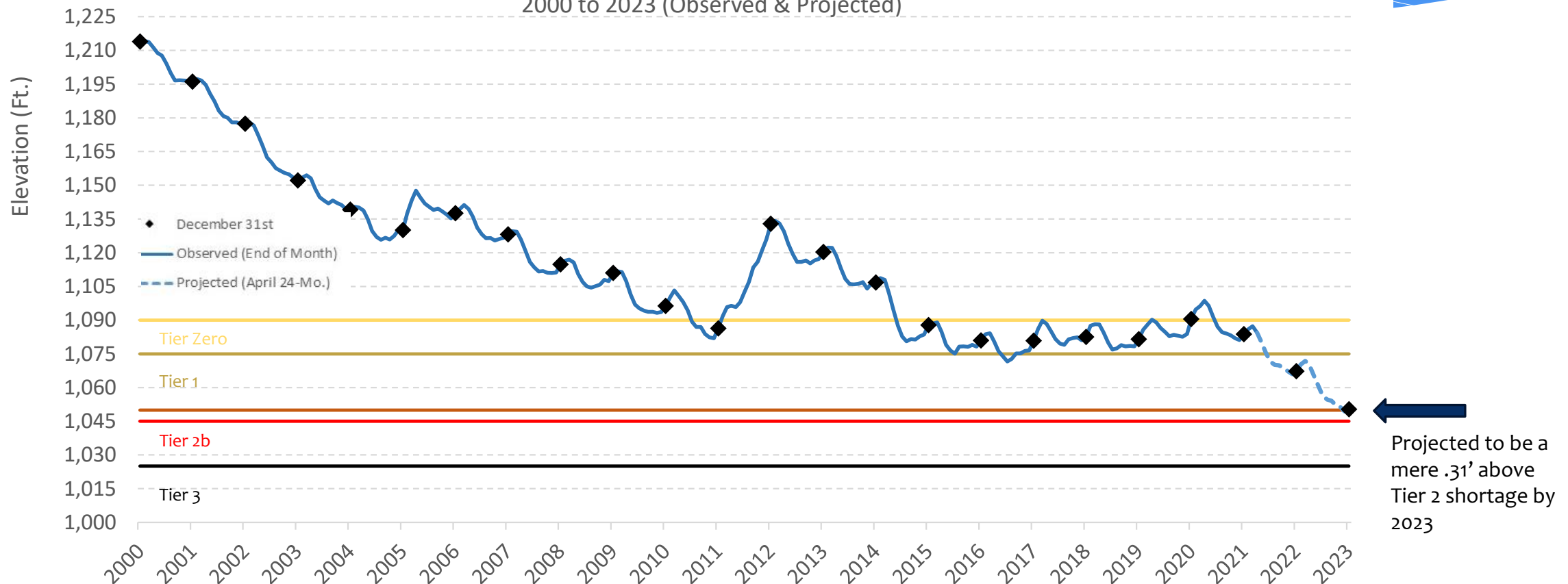
GOVERNOR DOUG DUCEY

Signs Arizona DCP Legislation (1.31.19)

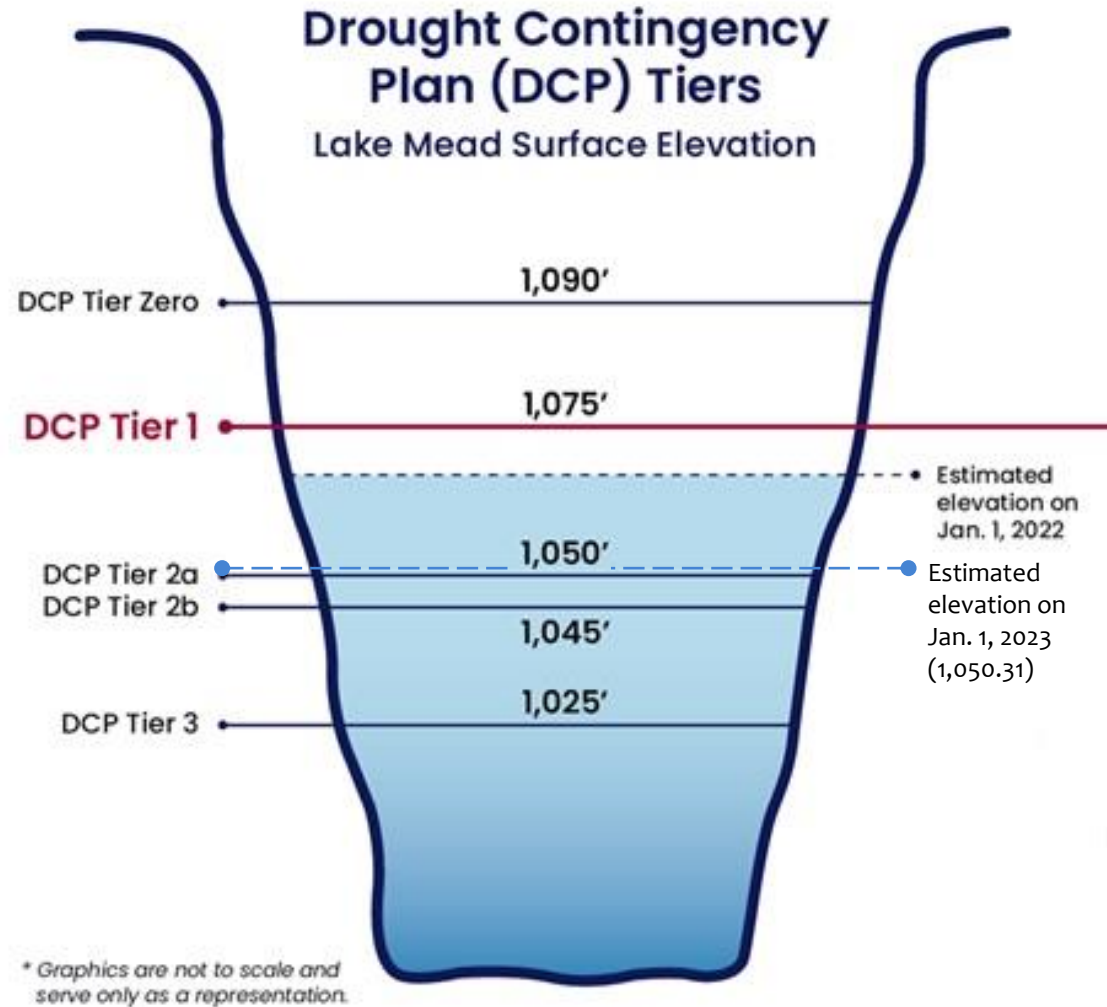
20 Years of Trending Towards Shortage

Lake Mead Elevation

2000 to 2023 (Observed & Projected)



Tier 1 Shortage:



Lake Mead Elevation	AZ 2007	AZ DCP	AZ TOTAL
≤1090 >1075	0	192K	192K
≤1075 >1050	320K	192K	512K
≤1050 >1045	400K	192K	592K
≤1045 >1040	400K	240K	640K
≤1040 >1035	400K	240K	640K
≤1035 >1030	400K	240K	640K
≤1030 >1025	400K	240K	640K
≤1025	480K	240K	720K

2022

Potential
2023

2007 Interim Guidelines Shortage Reductions and Incremental DCP Contributions

Lake Mead Elevation	AZ 2007	AZ DCP	AZ TOTAL	NV 2007	NV DCP	NV TOTAL	CA 2007	CA DCP	CA TOTAL	BOR DCP	MX Min 323	MX BWSCP	MX Total	TOTAL
≤1090 >1075	0	192K	192K	0	8K	8K	0	0	0	100k	0	41k	41k	341k
≤1075 >1050	320K	192K	512K	13K	8K	21K	0	0	0	100k	50k	30k	80k	713k
≤1050 >1045	400K	192K	592K	17K	8K	25K	0	0	0	100k	70k	34k	104k	821k
≤1045 >1040	400K	240K	640K	17K	10K	27K	0	200K	200K	100k	70k	76k	146k	1,113k
≤1040 >1035	400K	240K	640K	17K	10K	27K	0	250K	250K	100k	70k	84k	154k	1,171k
≤1035 >1030	400K	240K	640K	17K	10K	27K	0	300K	300K	100k	70k	92k	162k	1,229k
≤1030 >1025	400K	240K	640K	17K	10K	27K	0	350K	350K	100k	70k	101k	171k	1,288k
≤1025	480K	240K	720K	20K	10K	30K	0	350K	350K	100k	125k	150k	275k	1,475k

Recap from Previous Meetings

October 2019 - Present



Management Plans

A.R.S. § 45-563 (A)

“The director shall develop a management plan for each initial active management area for each of five management periods... and shall adopt the plans only after public hearings... The plans shall include a continuing mandatory conservation program... designed to achieve reductions in withdrawals of groundwater.”



5MP Turf Breakout - Progress

Update from Past Meetings:

- * Detailed existing conservation programs
- * Discussed goals for 5MP Conservation Program
- * Proposed allotment calculation methods for golf courses and non-golf turf facilities

Today:

- * Golf 5MP Proposal Packages

Next Steps :

- * **Submit final comments via questionnaire**
 - * <https://forms.gle/YDenixCFAmBzk3648>
- * **ADWR considers all comments from all meetings**
- * **ADWR finalizes conservation programs**
- * **Review and discussion of draft regulatory language (when available)**

Next Meeting:



TBD



5MP Turf Breakout - Progress

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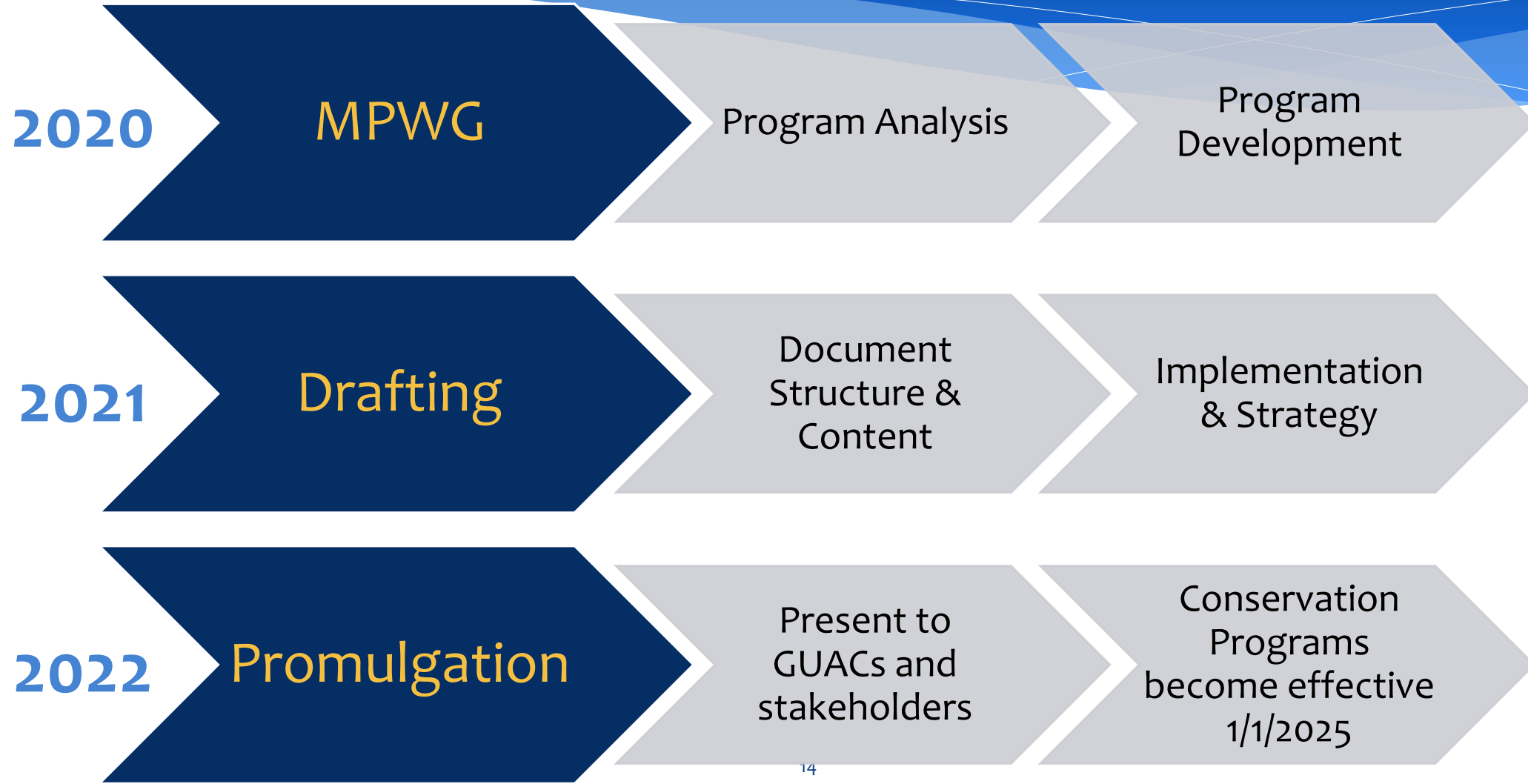


Status and Timeline of 5th Management Plans



Estimated 5MP Timeline

new.azwater.gov/5MP



5MP Turf Breakout Subgroup: Potential Work Plan/Timeline

Topic (5MP Turf Subgroup)	Meetings
Golf Conservation Program	April
Other Items, as needed	
Draft Regulatory Language Review	When available, 2 nd Half of 2021

Drafting Logistics

- * All 5 Fifth Management Plans will be drafted simultaneously
 - * Structure will largely match across AMAs
 - * Time for AMA Customization
 - * Subgroups will reconvene as needed to review draft regulatory language
- Goal: Publication of Initial Drafts in early 2022



Proposed Program Updates



Goals

Increased conservation (“reductions in withdrawals of groundwater”)

Improved simplicity & transparency
Improved data & realistic application rates
Improved administration, communication, & enforcement
Equity

Balanced – lighter impact on those who are already more efficient &
not too severe on those who are less efficient

Allotment Design

Allows each course flexibility to manage allotment

Allotment Structure

- * Calculation to set a total allotment for a facility
- * Total allotment is a water budget
 - * Facility can use water within their allotment, as they see fit
 - * Allows for management flexibility
 - * Flex accounts accommodates year to year variability

Allotment Variables

- * Acres of
 - * Total Turf
 - * Overseeded Turf
 - * Non-Overseeded turf
 - * Low water Use
 - * Water Surface
- * Application Rate and Assigned Efficiency



February Proposal Package

Phoenix AMA

PART 1: Allotment Method

Turf Category	Rate	Potential 5MP Golf Course Categories	
		C1* <90 acres	C2* 90+ acres
Overseeded Turf	5.84 AF/Ac	Up to 65 acres	up to 50 acres
Non-Overseeded Turf	4.22 AF/Ac	65-90 acres	50 to 90 acres
Additional Turf	2.5 AF/Ac	None	Up to 5 AF/Hole
LWU	0.74AF/Ac	Up to 1Ac/Hole	

PART 1: Results

Aggregate Change from 4MP	
Courses Currently Using Groundwater	All Courses
- 3.1%	- 2.2 %
- 2,214	- 2,128 AF

PART 2: Effluent Adjustment

* No Changes from 4MPs

PART 3: Allotment Additions

- * Minor Changes
 - Update to low water use application rate
 - Newly turfed areas cannot increase previous total turfed acres

**Acreages shown are for an 18-hole course and would be adjusted for courses with a different number of holes.*

Arizona Alliance for Golf Proposal

Phoenix AMA

PART 1: Allotment Method

Turf Category	Rate	Limit
Overseeded Turf	77.5% efficiency @ 6.036 AF/Ac	Up to 75 Acres *
Non-Overseeded Turf	77.5% efficiency @ 4.36*** AF/Ac	75 to 90 Acres *
Additional Turf	None	None
LWU	0.74AF/Ac	Up to 1Ac/Hole

PART 1: Results

Aggregate Change from 4MP**	
Courses Currently Using Groundwater	All Courses
-1.8%	+ 0.1%
-1274 AF	+74 AF

**The column labels were incorrect in the presentation shown during the 4/28/2021 meeting. They have been corrected here.

**Acreages shown are for an 18-hole course and would be adjusted for courses with a different number of holes.*

**** This application rate was previously written as 4.5 AF/Ac in error. The results listed incorporated 4.36AF/Ac and have not been updated.*

April Proposal Package

Phoenix AMA

PART 1: Allotment Method

Turf Category	Rate	Limit
Overseeded Turf	77.5% efficiency @ 6.036 AF/Ac	Up to 70 acres*
Non-Overseeded Turf	77.5% efficiency @ 4.5 AF/Ac	70 to 90 acres*
Additional Turf	NONE	NONE
LWU	0.74AF/Ac	Up to 1Ac/Hole

PART 1: Results

Aggregate Change from 4MP	
Courses Currently Using Groundwater	All Courses
- 3.1%	- 1.3 %
- 2,248	- 1,207 AF

PART 2: Effluent Adjustment

* Change to 0.75 for all AMAs

PART 3: Allotment Additions

* No change from February proposal

- Update to low water use application rate
- Newly turfed areas cannot increase previous total turfed acres

**Acreages shown are for an 18-hole course and would be adjusted for courses with a different number of holes.*



Examples

(Phoenix AMA, 18-Hole Course)

Course	Course size (Turfed Acres)	4MP Allotment	February Proposal Allotment	Alliance Proposal Allotment	April Proposal Allotment
A	65 acres	357 AF	378 AF (12%)	413 AF (16%)	413 AF (16%)
B	97 acres	487 AF	510 AF (5%)	549 (13%)	540 AF (11%)
C	125 acres	589 AF	567 AF (-4%)	534 (-9%)	526 AF (-11%)
D	152 acres	701 AF	567 AF (-18%)	543 (-23%)	535 AF (-24%)
E	62 acres	436 AF	391 AF (-13%)	403 AF (-8%)	403 AF (-8%)

Percentages reflect change from 4MP Allotment



Allotment Calculator

FEBRUARY PROPOSED 5MP TURF ALLOTMENT CALCULATOR FOR GOLF COURSES DRAFT

Enter Course Information In White Boxes Below

Proposed Allotment Information

Total Turfed Acres

Number of Holes

Water Surface Acres

Low Water Use Acres

Year Course Built

AMA

Choose AMA

Course Category

Turf Category 1 (AF)

Turf Category 2 (AF)

Turf Category 3 (AF)[§]

Low Water Use Acres (AF)

Water Surface Area (AF)**

Total Proposed Allotment (AF)*

0.00

*Total Proposed Allotment does not account for any allotment additions or adjustments.

**If water surface acres were added after a certain year, depending on the AMA, the course may not be eligible for full water surface area allotment (see Proposal Description for more information).

Last Updated: 4/26/2021



APRIL PROPOSED 5MP TURF ALLOTMENT CALCULATOR FOR GOLF COURSES DRAFT

Enter Course Information In White Boxes Below

Proposed Allotment Information

Total Turfed Acres

Number of Holes

Water Surface Acres

Low Water Use Acres

Year Course Built

AMA

Choose AMA

Turf Category 1 (AF)

Turf Category 2 (AF)

Low Water Use Acres (AF)

Water Surface Area (AF)**

Total Proposed Allotment (AF)*

0.00

*Total Proposed Allotment does not account for any allotment additions or adjustments.

**If water surface acres were added after a certain year, depending on the AMA, the course may not be eligible for full water surface area allotment (see Proposal Description for more information).

Last Updated: 4/26/2021



<https://new.azwater.gov/5MP/plans-concepts>



Presentation Arizona Alliance for Golf

Katie Prendergast, Horizon Strategies
Jessica Pacheco, Horizon Strategies
Rob Collins, Paradise Valley Country Club
Bri Kenny, Troon

Discussion

Closing Comments



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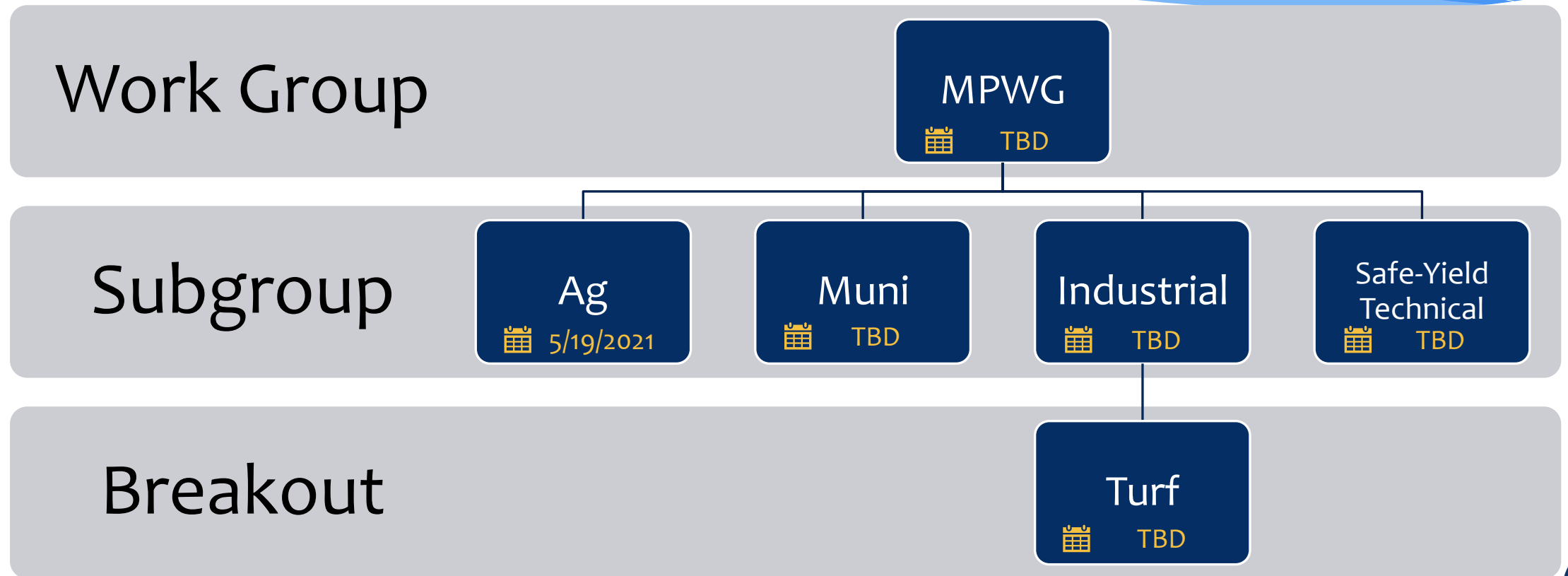


TBD



MPWG Subgroups

{All meeting info is available at new.azwater.gov/5MP/meetings}



Questions?

managementplans@azwater.gov

Management Plans Work Group:
new.azwater.gov/5MP

Full Text of Management Plans:
new.azwater.gov/ama/management-plans

